

PATENT SPECIFICATION



Application Date: Dec. 23, 1921. No. 34,679 / 21.

194,823

Complete Left: April 3, 1922.

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PROVISIONAL SPECIFICATION.

Improvements in or relating to Golf Clubs and the like.

I, JAMES HAMILTON STIRLING, British subject, of 111, St. Mary's Mansions, Paddington, W. 2, in the County of London, do hereby declare the nature of 5 this invention to be as follows:

This invention refers to improvements in or relating to golf clubs and the like, and it has for its object to provide simple and effective means whereby the weight 10 of the head or shaft and/or the balance of the club may be varied or adjusted in a simple and effective manner.

According to the present invention I provide within the head or shaft an opening or openings in which a weight or weights may be adjusted as to position and/or quantity.

In one simple and effective manner of carrying the present invention into effect 20 I provide within the head of the club and preferably in parallel alignment with the driving face thereof, a circular bore adapted to receive a central screwed shaft upon which are adjustably mounted a 25 series of weights of equal or varying sizes. The said shaft may conveniently be formed at its inner end to engage in a suitable central recess or bush provided within the body of the club, and at its 30 other end may be formed in one with, or engaged by, a screwed disc or cap screwing into the material of the club or into another bush provided therein. The weights on the screwed shaft may be 35 themselves screwed and be locked against each other to retain them in their desired positions, or they may be loose on the shaft and held in place by one or more nuts provided at their ends. The weights 40 may be of lead, brass, iron or other suitable or preferred metal or material as may be desired. Conveniently a spanner or adjusting tool may be provided containing projecting pegs adapted to engage 45 peg holes in the face of the screw cap or

disc, and also a pair of claws adapted to engage the weights or the lock nuts securing them in place. By this means it is possible to adjust the weight of the head of the club, and also the disposition of 50 same in relation to the striking face.

A similar screwed rod and adjustable weights may also be provided in an axial bore provided in the handle or shaft of the club, so that in some cases the balance 55 of the whole club may be varied or the weight altered as desired.

In some cases instead of arranging the weights in a bore in the head of the club substantially parallel to the striking face, 60 the bore may be arranged at an angle thereto, or it may be arranged vertically through or into the club, access thereto being obtained from the top or bottom as may be desired. In the case of a brass 65 fixing cap could conveniently be made in one piece with the screwed stem and could be made to engage a flange provided on the lower brass plate, as will be readily understood. In the case of a cleek, mid-iron, mashie, niblick or putter, the weights could conveniently be 70 arranged in the thickness thereof or in a longitudinally arranged boss or enlargement disposed behind the lower portion 75 of the face, the bore being preferably parallel with the face and with the lower edge thereof.

In some cases, particularly suitable for use in connection with the wooden head 80 of a driver or brassie, the whole device may be encased or enclosed in a cylindrical sleeve adapted to be fixed by suitable means into the cylindrical bore provided therein. Such fixing may 85 conveniently be obtained by providing prongs on the inner end of the said sleeve and buttress shaped grooves around the outer surface thereof, and in practice the said sleeve would be inserted into the head 90

and the prongs on the end driven into the wood of the club. In some cases also the tube itself could be radially expanded by means of a suitable tool, so as to bring
 5 the buttress shaped grooves into tight engagement with the adjacent surface of the tubular bore. The outer end would be closed by a cap screwing into the tube, as will be readily understood.
 10 It will be obvious that the above described means of adjusting the weight

or balance of golf clubs may be advantageously employed in connection with the handles of tennis rackets, cricket bats and other playing sticks.

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Dated this 23rd day of December, 1921.

J. S. WITHERS & SPOONER, ~
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 Staple House, 51 & 52, Chancery Lane,
 London,
 Agents for the Applicant.

20

COMPLETE SPECIFICATION.

Improvements in or relating to Golf Clubs and the like.

I, JAMES HAMILTON STERLING, British subject, of 111, St. Mary's Mansions, Paddington, W. 2, in the County of London, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

30 This invention relates to improvements in golf clubs, tennis and cricket bats or the like, of the kind in which the article is formed with a cavity for the reception of a stem associated with a cap, the said stem having thereon an adjustable weight or weights whereby the weight of the balance or both of the golf club or the like may be varied to suit the requirements of the user.
 35 In connection with golf clubs not provided with a stem it has heretofore been proposed to provide a weight or weights within a socket having a base portion adapted to be secured within the cavity by means of a screw, and also provided with lugs to engage within recesses formed in the said cavity, the open end of the said socket being adapted to be closed by a screw cap. In this case it
 40 has been proposed to form the socket with tongues bent inwardly to engage the side of the weight or weights to hold the same in position.

According to this invention the golf club, tennis and cricket bat or the like of the kind referred to is provided with one or more screw-threaded nuts adapted to be adjusted on the stem and to engage the weight or weights to hold the same in adjusted position. The said invention also contemplates the provision of a golf club or the like comprising a threaded stem integrally formed with a threaded plug or cap; a weight or weights adapted to be positioned on the stem, one or more threaded nuts adapted to engage the weight or weights and hold the same in

position, a sleeve surrounding the said weighted stem, and threaded to receive the said plug or cap, and a base portion on the said sleeve, the base portion of the said sleeve being secured in the cavity by means of a screw or lugs or both.

The invention will now be described with reference to the accompanying drawings which illustrate several methods of carrying it out in connection with the heads of golf clubs, and with the shafts or handles of golf clubs and tennis rackets. In said drawings.—

70 Figure 1 is a longitudinal sectional elevation, and Figure 2 is an end elevation, respectively, illustrating a suitable application of the invention to the head of a golf club;

75 Figures 3 and 4 are longitudinal and transverse sectional elevations showing a modified method of carrying out the invention in connection with the head of a golf club and as applied to a mid-iron;

80 Figure 5 is a transverse sectional elevation and Figure 6 a side elevation of a further modification relating to the head of a golf club;

85 Figures 7, 8, 9, 10, 11 and 13 are sectional views illustrating six other modified applications of the invention to the head of a golf club;

90 Figures 12 embodies plan and transverse sectional views of a modified construction of weight;

95 Figure 14 is a longitudinal section showing the method of applying the invention to the shaft of a golf club;

100 Figure 15 illustrates the invention applied to the handle of a tennis racket;

105 Figures 16 and 17 are axial sectional and plan views, respectively, of a detail.

110 Thus in one simple and effective manner of carrying the invention into effect I provide within the head *a* of the club, and preferably in parallel alignment with the driving or striking face

b thereof, as in Figures 1 to 4, a circular bore *c* adapted to receive a central screw-threaded rod *d* upon which are adjustably mounted a series of weights *e* of equal or varying sizes. The rod *d* may conveniently be formed at its inner end to engage in a suitable central recess *f* or bush provided within the body of the club head *a*, and at its other end is formed in one with, or engaged by, a screw-threaded plug, disc or cap *g* which screws into the material of the club head or into another bush provided therein. The weights *e* on the screwed rod *d* may be themselves screw-threaded and be screwed up tight and locked against each other to retain them in their desired positions, or they may be loose on the rod and be held in place by one or more nuts *h* provided at their ends, as in Figures 1 and 3. The weights could be slotted to enable them to be slipped laterally on to the rod, and the rod, or the bore in the head could be formed with flats to prevent rotation of the weights. The weights *e* may be of lead, brass, iron or other suitable or preferred metal or material, as may be desired. Conveniently a spanner or adjusting tool may be provided containing a screw-driver end or projecting pegs adapted to engage a slot *i* or peg holes in the face of the screw cap or disc *g*, and a pair of claws adapted to engage the weights *e* or the lock-nuts *h* securing the latter in place. A very convenient, simple and inexpensive tool would consist of a milled disc having a hexagonal or other shaped hole in its centre. The periphery of the disc could be engaged within the slot *i* for the purpose of screwing up and unscrewing the screw-cap, disc or plug *g*, and the nuts *h* be screwed into position and removed by engaging them in the hole of the disc. By this means it is possible to adjust the weight of the head *a* of the club, and also the disposition of the weight in relation to the driving or striking face *b*.

As indicated in Figure 14 a similar screw threaded rod *d*² and adjustable weights *e*² may also be provided in an axial bore *c*¹ provided in the handle or shaft *j* of the club, so that, in some cases, the balance of the whole club may be varied or the weight altered as desired.

In some cases, instead of arranging the weights in a bore in the head *a* of the club substantially parallel to the striking face *b*, the bore may be arranged at an angle thereto, such as at *c*² in Figures 5 to 7, the fixing cap *g*¹ being disposed in said face, or the bore may be arranged vertically through or into the club as at *c*³ in Figures 8, 9, 10, 11 and 13, access thereto being obtained from the top or

bottom as desired. In the case of a brass the fixing cap *g*² could conveniently be made in one piece with the screw-threaded rod *d*³ and could be made to engage a flange provided on the lower brass plate, as will be readily understood. In the case of a cleek, mid-iron, mashie, niblick or putter, the weights could be conveniently be arranged in the thickness thereof or in a longitudinally arranged boss or enlargement disposed behind the lower portion of the striking face, the bore being preferably parallel with the face and with the lower edge thereof.

In some cases, particularly suitable for use in connection with the wooden head of a driver or brassie, the whole device may be encased or enclosed in a cylindrical sleeve or cap *k* of brass or other material. Figures 5 to 11 and 13, adapted to be fixed by suitable means into the cylindrical bore provided therein. Several sleeves or caps and plugs made of different metals could be provided and be interchangeable for the purpose of assisting in adjusting the weight. Such fixing may conveniently be obtained by providing screws *l*, Figures 8 and 9, prongs *m*, Figure 8, on the inner end of the sleeve *k*, and/or buttress shaped portions *n*, Figure 13, around the outer surface of the latter, and in practice the said sleeve would be inserted into the head and the prongs on the end driven into the wood of the club. In some cases also the sleeve *k* itself could be radially expanded by means of a suitable tool, so as to bring the buttress shaped grooves or portions into tight engagement with the adjacent surface of the tubular bore. The outer end of the sleeve *k* would be closed by the plug or cap *g*¹ or *g*² screwing into the head or sleeve, as will be readily understood, or the plug *g*¹ as shown in Figure 5 is formed in one with the sleeve *k*.

It will be obvious that the above described means of adjusting the weight or balance of golf clubs may be advantageously employed in connection with the handles of tennis rackets, cricket bats and the like. In Figure 15 the handle *j*¹ of a tennis racket is centrally bored at *c*⁴ and fitted with a screw-threaded rod *d*⁴ carried by a plug *g*³ which screws into a sleeve *o*. The bore *c*⁴ may be of any cross-sectional shape, and the rod *d*⁴ can be rigid with the plug *g*³ or be swivelled or otherwise movably secured thereto. The weights *e* are held in place by means of end pieces *p* and nuts *h*¹, and said end pieces are fitted with spring fingers *q* or one or more spring rings to prevent lateral movement of the rod *d*⁴ inside the bore *c*⁴.

As indicated in Figure 7, the sleeve *k* may be locked within the head of the

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club by means of a set screw r . One or more smaller weights may be provided on the rod as at e^3 , Figure 8. A lead or other washer such as s in Figure 9 may be expanded or otherwise secured in place for the purpose of providing extra weight. If desired, the or each weight may be of composite form, that is, for instance, the weight may consist of a main portion of aluminium or other comparatively light material, such as at e^3 Figure 12, and a leaden portion e^4 . In Figure 12 the weight is illustrated as being of disc formation, but it may be of sector or block form; when of disc or sector form the leaden portion may be adjusted around the rod to thus dispose the main weight thereof to one side or another of the axis of said rod; when of block form the washer may be formed by a steel ring enclosing a leaden inner portion. The adjacent ends or faces of the several weights may be so shaped that they more or less interlock with one another.

I am aware that it has previously been proposed to adjust the balance of billiard cues by means of threaded weights engaging a threaded rod arranged within the butt of the cues, one end of the said rod being fixed in a cap and the other or forward end thereof being lodged in a rubber cushion pocket. It has also been proposed to employ a rod having thereon a plurality of heavy and light removable weights, the inner end of the rod being threaded to engage a threaded washer and the outer end being formed with a winged button threaded to engage a tapered ring secured in the butt end of the cue.

Having now particularly described and ascertained the nature of my said invention

and in what manner the same is to be performed, I declare that what I claim is:—

1. A golf club or the like of the kind referred to, having one or more screw-threaded nuts adapted to be adjusted on the stem and to engage the weight or weights to hold the same in adjusted position. 45
2. A golf club or the like according to Claim 1, in which each weight is formed of materials of different weight, substantially as and for the purpose described. 50
3. A golf club or the like according to Claim 1, in which each weight is slotted to enable it to be slipped laterally on the stem. 55
4. A golf club or the like according to Claim 1, in which the stem having the weight or weights thereon is surrounded by a sleeve formed integral with a cap. 60
5. A golf club or the like of the kind referred to, comprising a threaded stem integrally formed with a threaded plug or cap, a weight or weights adapted to be positioned on the stem, one or more threaded nuts adapted to engage the weight or weights and hold the same in position, a sleeve surrounding the said weighted stem and threaded to receive the said plug or cap, and a base portion on the said sleeve, the base portion of the said sleeve being secured in the cavity by means of a screw or lugs or both. 70

Dated this 3rd day of April, 1922.

J. S. WITHERS & SPOONER,
Chartered Patent Agents,
Staple House, 51 & 52, Chancery Lane,
London,
Agents for the Applicant. 80

[This Drawing is a reproduction of the Original on a reduced scale]

FIG.1.

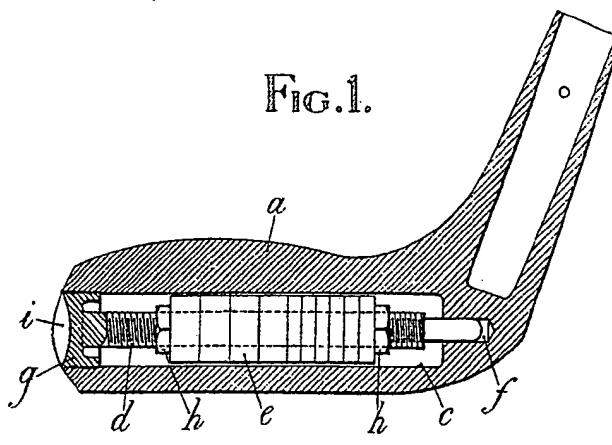


FIG. 2.

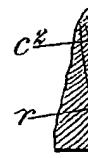
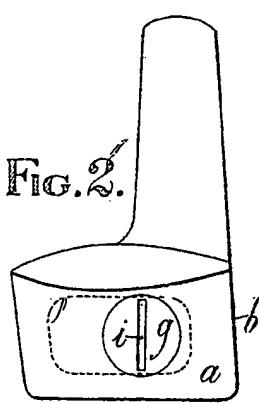


FIG. 3.

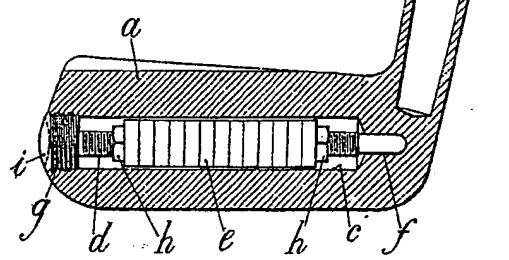


FIG. 4.

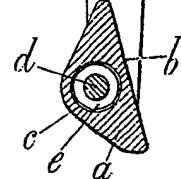


FIG. 6.

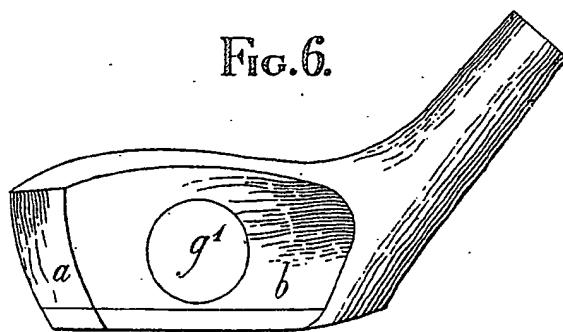


FIG. 5.

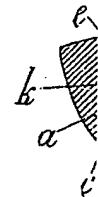
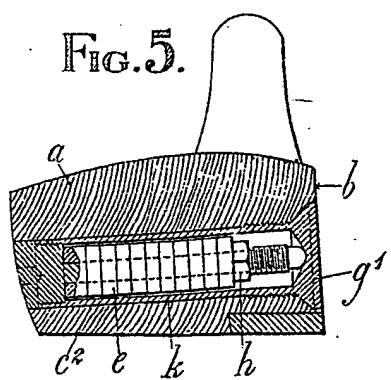


FIG. 7.

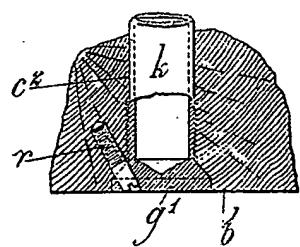


FIG. 8.

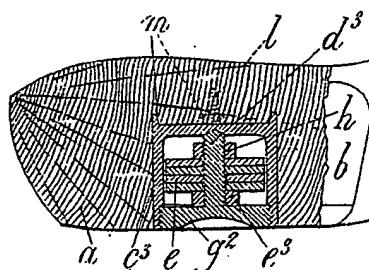


FIG. 9.

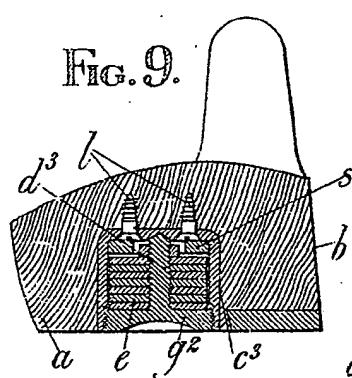


FIG. 10.

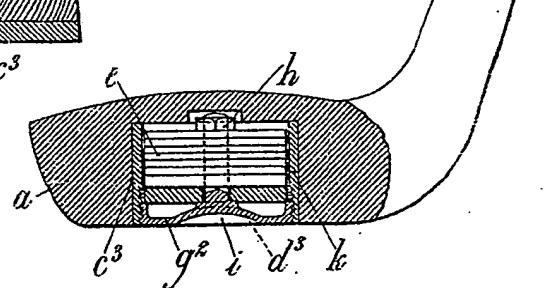


FIG. 12.

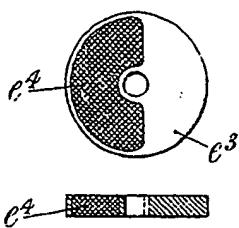


FIG. 11.

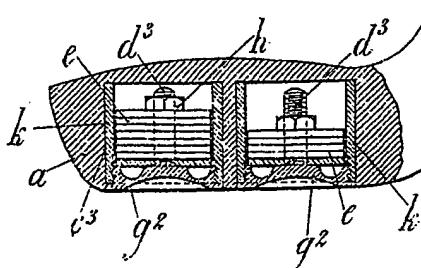
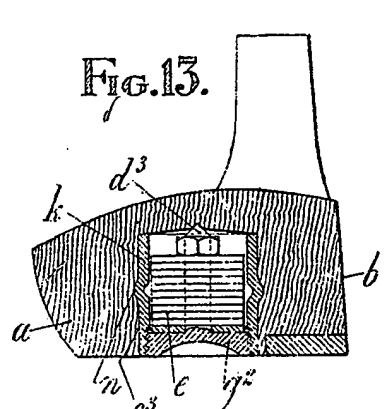


FIG. 13.



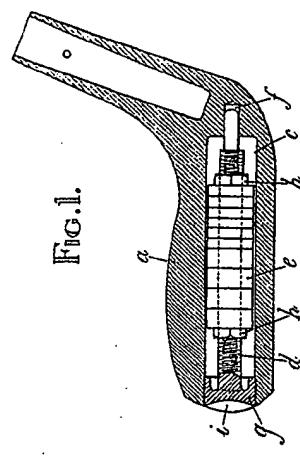


FIG. 1.

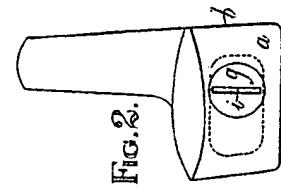


FIG. 2.

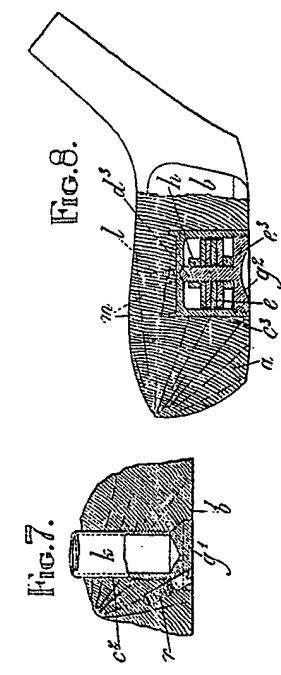


FIG. 3.

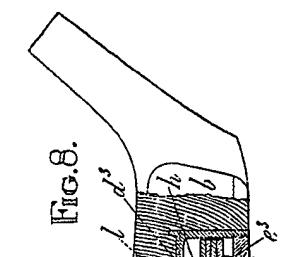


FIG. 4.

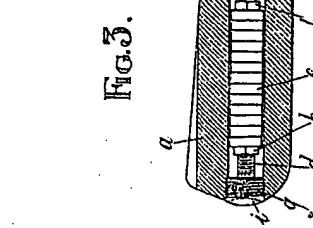


FIG. 5.

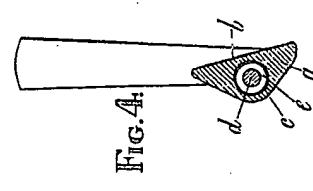


FIG. 6.

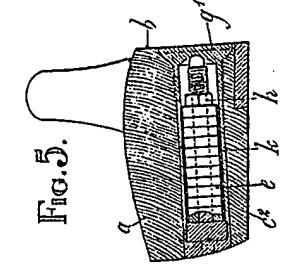


FIG. 7.

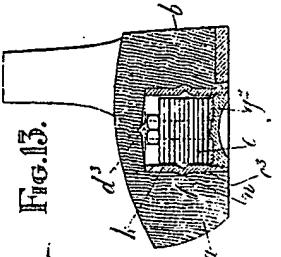


FIG. 8.

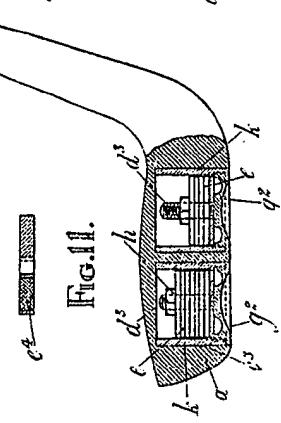


FIG. 9.

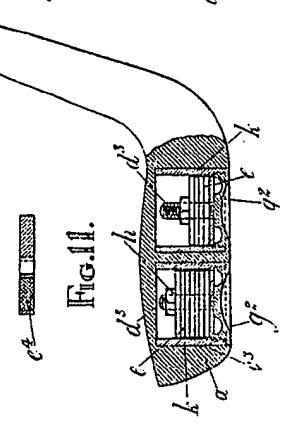


FIG. 10.

FIG. 12.

FIG. 11.

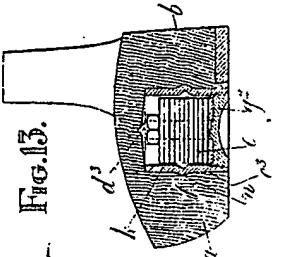


FIG. 11.

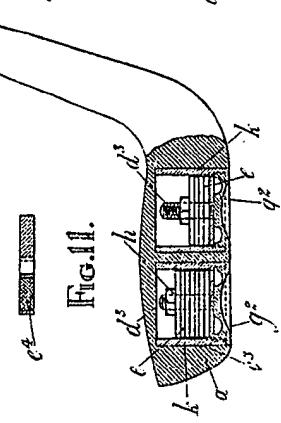


FIG. 12.

FIG.15.

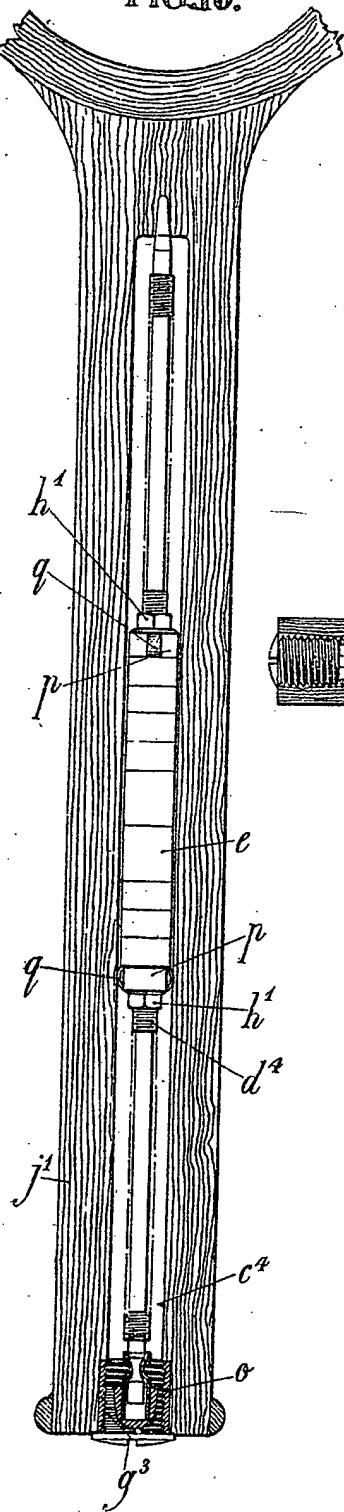


FIG.14.

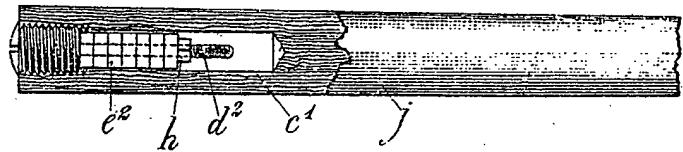


FIG.16.

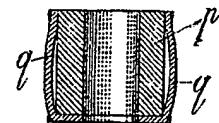
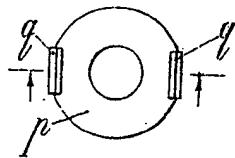


FIG.17.



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